

Ra-226 results for 920 S. St. Francis Street  
Monnig, Rob  
to:  
Randy Schademann  
06/02/2009 10:21 AM  
Show Details

History: This message has been forwarded.

Randy,

Just got the analytical back for 920 St. St. Francis Street samples. The four samples ranged from 11.3 to 495 pCi/g for Ra-226.

Colin is working on the figure. I will have him add the samples results to the figure.

**Rob Monnig, PE | Chemical Engineer**  
Direct 816 412 1775 | Main 816 412 1741 | Fax 816 410 1748  
rob.monnig@tetra.com

Tetra Tech | Kansas City Operations | 415 Oak Street | Kansas City, MO 64106 | [www.tetratech.com](http://www.tetratech.com) **Complex World, Clear Solutions™**



Think Green - Not every email needs to be printed

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30098944



Superfund



June 01, 2009

Mr. Robert Monnig  
Tetra Tech EM Inc.  
415 Oak Street  
Kansas City, Missouri 64106

Re: Standard Products -Ra226  
Work Order: 229665

Dear Mr. Monnig:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 12, 2009. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext 4297.

Sincerely,

Amanda Rasco  
Project Manager

Purchase Order: 1048525  
Enclosures

Page <u>1</u> of <u>1</u> Project # _____ GEL Quote # <u>651909-0367</u> COC Number <sup>(1)</sup> _____ PO Number _____		<b>GEL Chain of Custody and Analytical Request</b> **See www.gel.com for GEL's Sample Acceptance SOP** GEL Work Order Number: <u>229665</u>		GEL Laboratories, LLC 2040 Savage Road Charleston, SC 29407 Phone: (843) 556-8171 Fax: (843) 766-1178											
Client Name <u>Tetra Tech</u> Phone # <u>816-412-1775</u>		Sample Analysis Requested <sup>(5)</sup> (Fill in the number of containers for each test)													
Project/Site Name <u>Radium - Standard Products</u> Fax # _____		Should this sample be considered: Radiactive _____ TSCA Regulated _____	Total number of containers <u>Radium-226</u> <u>by ingrowth</u> <u>gamma spec</u>							-- Preservative Type (6)					
Address <u>Wichita, KS</u>										Comments Note extra sample is required for sample specific QC					
Collected by <u>Robert Manning</u> Send Results To <u>rob.manning@tetra.com</u>															
Sample ID <small>* For composites - indicate start and stop date/time</small>	*Date Collected <small>(mm-dd-yy)</small>	*Time Collected <small>(Military) (hh:mm)</small>	QC Code <sup>(2)</sup>	Field Filtered <sup>(3)</sup>	Sample Matrix <sup>(4)</sup>	Radiactive	TSCA Regulated	Total number of containers							
920-01 0-6"	<u>05/09/09</u>	<u>0935</u>	<u>N</u>	<u>No</u>	<u>So</u>			<u>1</u>	<u>X</u>						
920-01 6-12"	<u>05/09/09</u>	<u>0945</u>	<u>N</u>	<u>No</u>	<u>So</u>			<u>1</u>	<u>X</u>						
920-02 0-6"	<u>05/09/09</u>	<u>0955</u>	<u>N</u>	<u>No</u>	<u>So</u>			<u>1</u>	<u>X</u>						
920-02 6-12"	<u>05/09/09</u>	<u>1005</u>	<u>N</u>	<u>No</u>	<u>So</u>			<u>1</u>	<u>X</u>						
TAT Requested Normal <input checked="" type="checkbox"/> Rush _____ Specify _____ (Subject to Surcharge)		Fax Results Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Circle Deliverable C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4											
Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards <u>Insitu gamma reading with Ludlum 2x2 probe: 50-300 kcpm</u>														Sample Collection Time Zone Eastern <input checked="" type="checkbox"/> Pacific _____ Central <input type="checkbox"/> Other _____ Mountain _____	
Chain of Custody Signatures						Sample Shipping and Delivery Details									
Relinquished By (Signed) _____ Date <u>5/11/09</u> Time <u>11:00</u>		Received by (signed) _____ Date _____ Time _____		GEL PM <u>Amanda Rasco</u>											
1 <u>[Signature]</u>		1 <u>[Signature]</u>		Method of Shipment <u>FedEx</u>						Date Shipped <u>5/11/09</u>					
2 _____		2 <u>[Signature]</u>		Airbill # _____											
3 _____		3 <u>[Signature]</u>		Airbill # <u>5/12/09 0845</u>											
1) Chain of Custody Number = Client Determined 2) QC Codes N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite 3) Field Filtered For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered 4) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Focal, N=N 5) Sample Analysis Requested Analytical method requested (i.e. 8160B, 6010B/7470A) and number of containers provided for each (i.e. 8160B - 3, 6010B/7470A - 1) 6) Preservative Type HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank WHITE = LABORATORY      YELLOW = FILE      PINK = CLIENT															
For Lab Receiving Use Only Custody Seal Intact? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Cooler Temp <u>20</u> C															

## SAMPLE RECEIPT &amp; REVIEW FORM

Client: <u>TETR</u>		SDG/ARCO/Work Order: <u>229665</u>	
Received By: <u>Ricky Albee</u>		Date Received: <u>5/13/09</u>	
Suspected Hazard Information	Yes	No	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Maximum Counts Observed*: <u>4400 cpm ~0.5uRem/hr</u>
Classified Radioactive II or III by RSO?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
COC/Samples marked containing PCBs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Hazard Class Shipped: <u>7</u> UN#: <u>2910</u>
Samples identified as Foreign Soil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Sample Receipt Criteria		Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: seals broken    damaged container    leaking container    other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Preservation Method: ice bags    blue ice    dry ice <u>none</u> other (describe) <u>20°</u>
3	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: seals broken    damaged container    leaking container    other (describe)
5	Samples requiring chemical preservation at proper pH?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
7	Are Encore containers present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments:

FedEx 8682 9804 4046

## **GEL LABORATORIES LLC**

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – [www.gel.com](http://www.gel.com)

### **Certificate of Analysis Report for**

**TETR027 Tetra Tech Missouri Project**

**Client SDG: 229665 GEL Work Order: 229665**


**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Amanda Rasco.



Reviewed by

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## Certificate of Analysis

Company : Tetra Tech EM Inc  
Address 415 Oak Street  
Kansas City, Missouri 64106

Report Date: June 1, 2009

Contact Mr. Robert Monnig  
Project: **Standard Products –Ra226**

Client Sample ID: 920-01 0-6"  
Sample ID: 229665001  
Matrix: Soil  
Collect Date: 05-MAY-09 09:35  
Receive Date: 12-MAY-09  
Collector: Client

Project: TETR02701  
Client ID: TETR027

Parameter	Qualifier	Result	Uncertainty	DL	RI	Units	DF	Analyst	Date	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>												
<i>Gamma, Ra226, Solid "Dry Weight Corrected"</i>												
Radium-226		11.3	+/-0.829	0.0695	0.500	pCi/g		MJH1	05/25/09	1623	867489	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	05/14/09	0833	866847

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	

# GEL LABORATORIES LLC

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## Certificate of Analysis

Company Tetra Tech EM Inc  
Address 415 Oak Street  
Kansas City, Missouri 64106

Report Date: June 1, 2009

Contact: Mr. Robert Monnig  
Project: Standard Products –Ra226

Client Sample ID. 920-01 6-12"  
Sample ID. 229665002  
Matrix: Soil  
Collect Date: 05-MAY-09 09:45  
Receive Date: 12-MAY-09  
Collector: Client

Project: TETR02701  
Client ID. TETR027

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>												
<i>Gamma, Ra226. Solid "Dry Weight Corrected"</i>												
Radium-226		52.4	+/-4.24	0.112	0.500	pCi/g		MJH1	05/25/09	1623	867489	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	05/14/09	0833	866847

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EML HASL 300, 4.5 2.3	

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## Certificate of Analysis

Company : Tetra Tech EM Inc  
Address : 415 Oak Street  
Kansas City, Missouri 64106

Report Date: June 1, 2009

Contact: Mr Robert Monnig  
Project: Standard Products -Ra226

Client Sample ID: 920-02 0-6"  
Sample ID: 229665003  
Matrix: Soil  
Collect Date: 05-MAY-09 09:55  
Receive Date: 12-MAY-09  
Collector: Client

Project: TETR02701  
Client ID: TETR027

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>												
<i>Gamma, Ra226, Solid "Dry Weight Corrected"</i>												
Radium-226		495	+/-39.6	0.815	0.500	pCi/g		MJH1	05/26/09	0632	867489	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	05/14/09	0833	866847

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EML HASL 300, 4.5 2 3	



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## Certificate of Analysis

Company Tetra Tech EM Inc.  
Address 415 Oak Street  
Kansas City, Missouri 64106

Report Date June 1, 2009

Contact Mr. Robert Monnig  
Project Standard Products – Ra226

Client Sample ID: 920-02 6-12"  
Sample ID: 229665004  
Matrix: Soil  
Collect Date: 05-MAY-09 10:05  
Receive Date: 12-MAY-09  
Collector: Client

Project: TETR02701  
Client ID: TETR027

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>												
<i>Gamma, Ra226, Solid "Dry Weight Corrected"</i>												
Radium-226		271	+/-21.3	0.614	0.500	pCi/g		MJH1	05/26/09	0633	867489	1

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	05/14/09	0833	866847

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	

# GEL LABORATORIES LLC

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## QC Summary

Report Date: June 1, 2009  
Page 1 of 2

Tetra Tech EM Inc.  
415 Oak Street  
Kansas City, Missouri  
Contact: Mr. Robert Monnig

Workorder: 229665

Paramname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	867489										
QC1201838946	229665001	DUP									
Radium-226		11.3		10.1	pCi/g	11.0		(0% - 20%)	MJH1	05/26/09	06:36
		+/-0.829		+/-0.918							
QC1201838947	LCS										
Americium-241	16.3			14.6	pCi/g		89.5	(75%-125%)		05/26/09	06:40
				+/-1.09							
Cesium-137	5.79			6.42	pCi/g		111	(75%-125%)			
				+/-0.579							
Cobalt-60	7.22			7.66	pCi/g		106	(75%-125%)			
				+/-0.630							
Radium-226				0.950	pCi/g			(75%-125%)			
				+/-0.375							
QC1201838945	MB										
Radium-226			U	0.023	pCi/g					05/26/09	06:35
				+/-0.0701							

### Notes:

The Qualifiers in this report are defined as follows:

- \*\* Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD

## GEL LABORATORIES LLC

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### QC Summary

Workorder: 229665

Page 2 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
UI	Gamma Spectroscopy--Uncertain identification										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
Y	QC Samples were not spiked with this compound										
^	RPD of sample and duplicate evaluated using +/-RL Concentrations are <5X the RL Qualifier Not Applicable for Radiochemistry.										
h	Preparation or preservation holding time was exceeded										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

\* Indicates that a Quality Control parameter was not within specifications

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

**List of current GEL Certifications as of 01 June 2009**

<b>State</b>	<b>Certification</b>
Arizona	AZ0668
Arkansas	88-0651
CLIA	42D0904046
California – NELAP	01151CA
Colorado	GEL
Connecticut	PH-0169
Dept of Navy	NFESC 413
EPA Region 5	WG-15J
Florida – NELAP	E87156
Georgia	E87156 (FL/NELAP)
Georgia DW	967
Hawaii	N/A
ISO 17025	2567.01
Idaho	SC00012
Illinois – NELAP	200029
Indiana	C-SC-01
Kansas – NELAP	E-10332
Kentucky	90129
Louisiana – NELAP	03046
Maryland	270
Massachusetts	M-SC012
Nevada	SC00012
New Jersey – NELAP	SC002
New Mexico	FL NELAP E87156
New York – NELAP	11501
North Carolina	233
North Carolina DW	45709
Oklahoma	9904
Pennsylvania – NELAP	68-00485
South Carolina	10120001/10120002
Tennessee	TN 02934
Texas – NELAP	T104704235-07B-TX
U S Dept of Agriculture	S-52597
Utah – NELAP	GEL
Vermont	VT87156
Virginia	00151
Washington	C1641

## **Planning Committee Conference Call- April 6, 2010**

Participating on the call: John Staples, Kim Olson, Tom Morgan, Jack Briggs, Mark Lohnes, Manuel Schmaedick, Bob Goldhammer, Adam Broughton, Pat Reitz, Karen Eagleson, Tina Brown, Swapan Saha, and Steve Wurtz

### **Conference Dates: July 28–31, 2011 (Thursday–Saturday)**

Plan for five breakouts at the hotel. Also five or six training sessions on Thursday. Manuel said the tracks being considered are: 1) LEPC Basics; 2) Facility Preparedness (Homeland Security), 3) Hazmat/Technology, 4) Health & Medical, 5) Transportation Chemical and Safety Awareness. Pat suggested having Social Networking and Emergency Response as a possible track or training session on Thursday. John said the Social Networking training that Pat attended was sponsored by the Mid-America Regional Council (MARC).

Manuel said they may change the format of the table top exercise. Everyone agreed the table top exercise was good and we should keep it on the program. Adam would like to know the definite program schedule so he can plan how the exhibitors will be handled. The committee agreed that we should not have a Sunday morning Closing Session, so the conference will end around 5:00 p.m. on Saturday.

Adam said he was planning on condensing the exhibiting time to one day. Bob questioned whether that was enough exposure for the exhibitors. The committee members discussed the time frame and Adam said he would work up a schedule and present to the entire Planning Committee. Adam said they were planning to have an Exhibitor's Reception again on Friday from 5:00-7:00 p.m. Would try to coordinate it with the local LEPC's social event. Depends on what they are planning, may not have the exhibitor reception then.

Committee discussed the Awards Ceremony. Karen said we should have the Awards Luncheon on Saturday. Maybe combine the Awards Ceremony with the local event.

Bob laid out the time frame again. Karen suggested moving the tabletop exercise to Saturday afternoon. Tom mentioned the after action reports. Karen asked if we were going to have the State Breakout sessions again and if so when. Steve said they would be on Saturday morning. Manuel would schedule them in one of the track time slots.

John asked about the rates for exhibitors and registration fees. Adam said he would keep the exhibitor's fee the same as last conference. He is also going to try and recruit more sponsors. Bob said we should keep the prices the same as last time, and try to trim expenses. Karen asked about hotel costs. John said we are working with them to settle on an amount. Without the Sunday morning session we will lower the number of sleeping room commitments on Saturday night.

Steve asked about when a Save the Date announcement should go out. Committee agreed sometime in June would be good. Will send out an announcement via email then and mail a post card in July/August, 2010. Adam will announce it at the Regional Response Team meeting in May.

John said he will get together with Kim and develop a marketing plan for the conference.

Steve will setup a meeting at the hotel on May 6, 2010 with John, Adam, Manuel and Steve to meet with hotel staff and look over the meeting space.

**Next Planning Committee meeting: Tuesday June 15, 2010 at the Embassy Suites Omaha at 12:00 noon**